Supplementary Table S1. Detailed histopathologic findings in 107 patients with lupus nephritis

	Overall (n=107)	Non-ESRD (n=92)	ESRD (n=15)	P value
Endocapillary hypercellularity, n (%)				0.111
Absent	2 (1.9%)	2 (2.2%)	0	
1%-24% of glomeruli	17 (15.9%)	12 (13.0%)	5 (33.3%)	
25%-49% of glomeruli	20 (18.7%)	17 (18.5%)	3 (20.0%)	
≥50% of glomeruli	68 (63.5%)	61 (66.3%)	7 (46.7%)	
Neutrophils/karyorrhexis, n (%)				0.910
Absent	10 (9.3%)	9 (9.8%)	1 (6.7%)	
1%-24% of glomeruli	20 (18.7%)	15 (16.3%)	5 (33.3%)	
25%-49% of glomeruli	41 (38.3%)	38 (41.3%)	3 (20.0%)	
≥50% of glomeruli	36 (33.7%)	30 (32.6%)	6 (40.0%)	
Fibrinoid necrosis, n (%)				0.385
Absent	31 (29.0%)	26 (28.3%)	5 (33.3%)	
1%-24% of glomeruli	56 (52.3%)	47 (51.1%)	9 (60.0%)	
25%-49% of glomeruli	18 (16.8%)	18 (19.6%)	0	
≥50% of glomeruli	2 (1.9%)	1 (1.0%)	1 (6.7%)	
Hyaline deposits, n (%)				0.129
Absent	12 (11.2%)	11 (12.0%)	1 (6.7%)	
1%-24% of glomeruli	10 (9.3%)	8 (8.7%)	2 (13.3%)	
25%-49% of glomeruli	29 (27.1%)	21 (22.8%)	8 (53.3%)	
≥50% of glomeruli	56 (52.4%)	52 (56.5%)	4 (26.7%)	
Cellular/fibrocellular crescent, n (%)				0.112
Absent	11 (10.3%)	11 (12.0%)	0	
1%-24% of glomeruli	32 (29.9%)	29 (31.5%)	3 (20.0%)	
25%-49% of glomeruli	41 (38.3%)	33 (35.9%)	8 (53.3%)	
≥50% of glomeruli	23 (21.5%)	19 (20.6%)	4 (26.7%)	
Interstitial inflammation, n (%)				0.004
Absent	3 (2.8%)	3 (3.3%)	0	
1%-24% in the cortex	40 (37.4%)	37 (40.2%)	3 (20.0%)	
25%-49% in the cortex	39 (36.4%)	36 (39.1%)	3 (20.0%)	
≥50% in the cortex	25 (23.4%)	16 (17.4%)	9 (60.0%)	
Global/segmental sclerosis, n (%)				0.033
Absent	35 (32.7%)	32 (34.8%)	3 (20.0%)	
1%-24% of glomeruli	47 (43.9%)	42 (45.7%)	5 (33.3%)	
25%-49% of glomeruli	16 (15.0%)	13 (14.1%)	3 (20.0%)	
≥50% of glomeruli	9 (8.4%)	5 (5.4%)	4 (26.7%)	
Fibrous crescents, n (%)				0.000
Absent	81 (75.7%)	76 (82.6%)	5 (33.3%)	
1%-24% of glomeruli	23 (21.5%)	14 (15.2%)	9 (60.0%)	
25%-49% of glomeruli	3 (2.8%)	2 (2.2%)	1 (6.7%)	

≥50% of glomeruli	0	0	0	
Tubular atrophy, n (%)				0.000
Absent	2 (1.9%)	2 (2.2%)	0	
1%-24% of the cortical tubules	63 (58.9%)	60 (65.2%)	3 (20.0%)	
25%-49% of the cortical tubules	34 (31.8%)	25 (27.2%)	9 (60.0%)	
≥50% of the cortical tubules	8 (7.4%)	5 (5.4%)	3 (20.0%)	
Interstitial fibrosis, n (%)				
Absent	3 (2.8%)	3 (3.3%)	0	0.005
1%-24% in the cortex	55 (51.4%)	52 (56.5%)	3 (20.0%)	
25%-49% in the cortex	37 (34.6%)	28 (30.4%)	9 (60.0%)	
≥50% in the cortex	12 (11.2%)	9 (9.8%)	3 (20.0%)	

Supplementary Table S2. Multivariable Cox regression analysis: predictors of CKD with baseline clinicopathological characteristics and renal response at 6 months

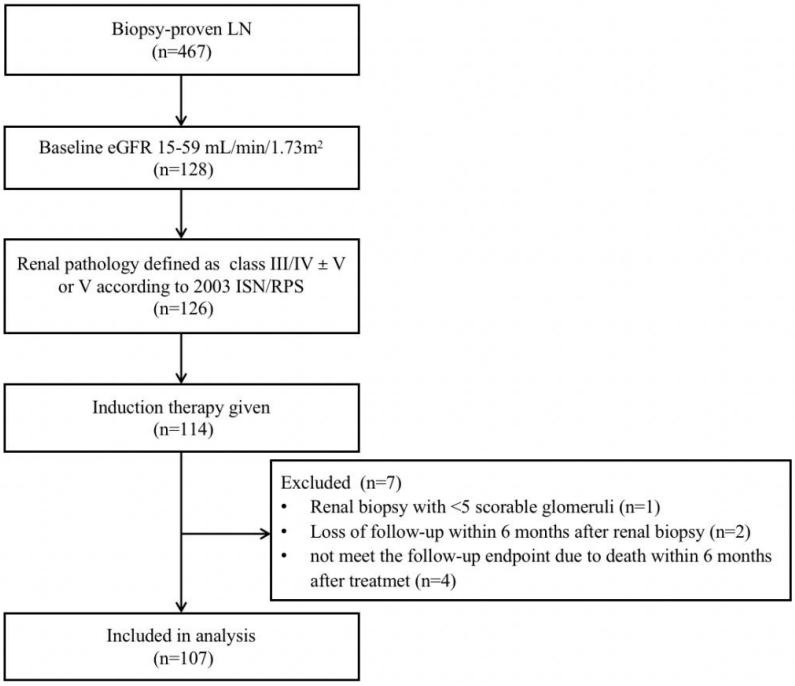
	Model 5-without pathology			Model 6-with pathology		
	HR	95% CI	P value	HR	95% CI	P value
age	1.032	1.010-1.054	0.004			
SLE duration >6 months	2.503	1.197-5.234	0.015	2.224	1.053-4.696	0.036
NR at 6 months	5.161	2.309-11.537	0.000	4.177	1.790-9.746	0.001
Chronicity index				1.234	1.045-1.458	0.013
C-index	0.811 (0.782-0.840)			0.821 (0.788-0.854)		

Supplementary Table S3. Adverse events of 111 patients with lupus nephritis during the 6 months of induction therapy according renal response

	Overall (n=111)	**Responders (n=61)**	**No-responders (n=46)**	**P value**
Death, n (%)	4 (3.6%)			
Any adverse events, n (%)	65 (58.6%)	39 (63.9%)	26 (56.5%)	0.437
Infection, n (%)	57 (51.4%)	36 (59.0%)	21 (45.7%)	0.170
Cytomegalovirus	26 (23.4%)	19 (31.1%)	7 (15.2%)	0.057
Varicella zoster virus	5 (4.5%)	2 (3.3%)	3 (6.5%)	0.650
Herpes simplex	1 (0.9%)	0	1 (2.2%)	0.430
Invasive fungal infection	4 (3.6%)	3 (4.9%)	1 (2.2%)	0.633
Pneumonia	20 (18.2%)	12 (19.7%)	8 (17.4%)	0.764

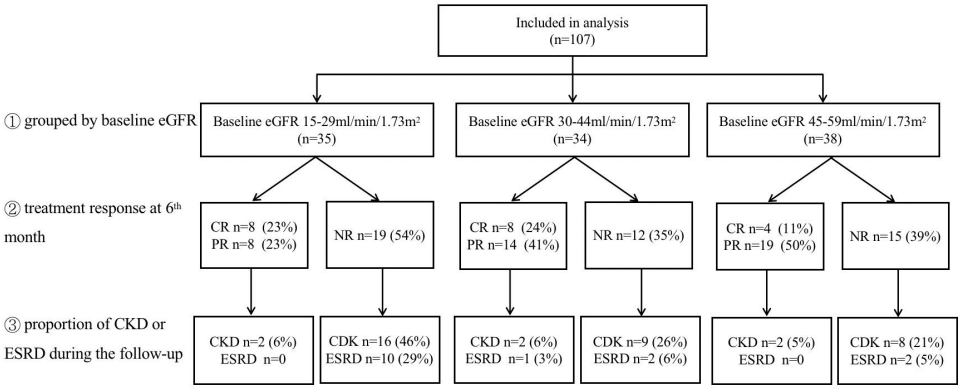
Septicemia	3 (2.7%)	3 (4.9%)	0	0.258
Upper respiratory tract infection	8 (7.2%)	5 (8.2%)	3 (6.5%)	0.744
Bronchitis	3 (2.7%)	0	3 (6.5%)	0.076
Urinary tract infection	1 (0.9%)	1 (1.6%)	0	0.258
Skin and soft tissue infection	3 (2.7%)	3 (4.9%)	0	0.258
Other infections	10 (9.0%)	7 (11.5%)	3 (6.5%)	0.510
Drug-related liver damage, n (%)	12 (10.8%)	8 (13.1%)	4 (8.7%)	0.473
Steroid diabetes, n (%)	10 (9.0%)	5 (8.2%)	5 (10.9%)	0.742
Thrombotic events, n (%)				
Cerebral infarction	1 (0.9%)	1 (1.6%)	0	0.430
Pulmonary embolism	2 (1.8%)	0	2 (4.3%)	0.183
Venous thrombosis	3 (2.7%)	1 (1.6%)	2 (4.3%)	0.576

The terms used to describe the adverse events are those listed in the Common Terminology Criteria for Adverse Events, version 5.0. Patients with more than one of the same events were counted once for that event.

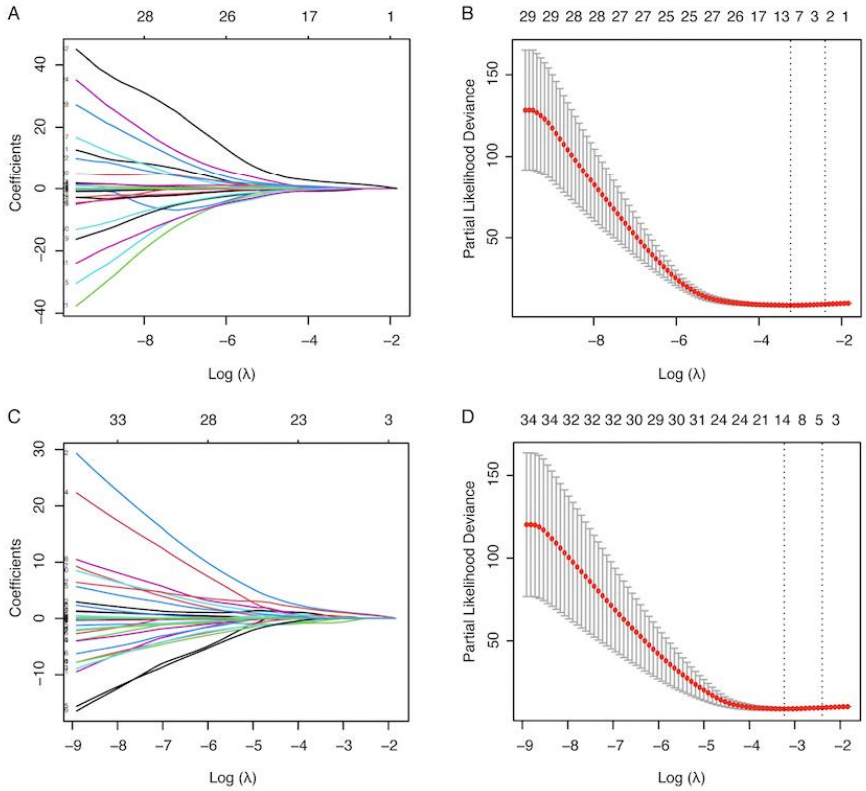


Supplementary Figure S1. Flowchart for screening enrolled patients.

LN: lupus nephritis; eGFR:estimated glomerular filtration rate; 2003 ISN/RPS: International Society of Nephrology/Renal Pathology Society 2003 classification.

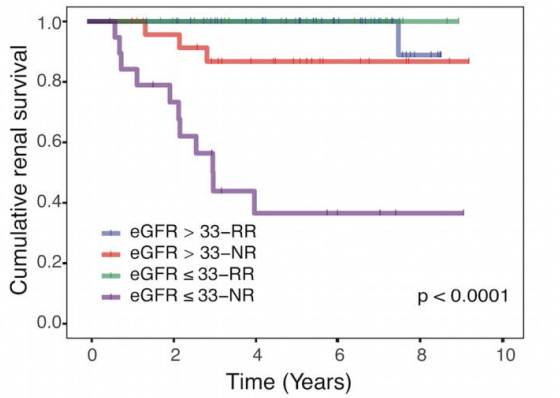


Supplementary Figure S2. A flow chart grouped by baseline eGFR showing renal remission at 6 months and the incidence of CKD or ESRD at the follow-up endpoint for each group of patients.



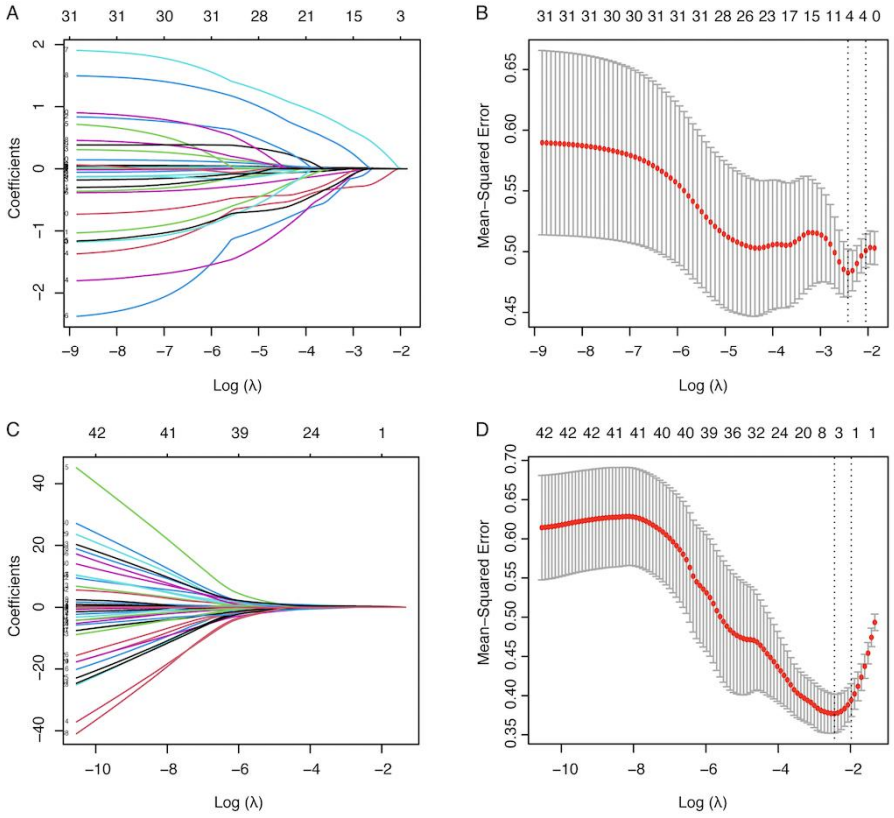
Supplementary Figure S3. Feature selection by the least absolute shrinkage and selection operator (LASSO) model to predict ESRD. (A) LASSO coefficient profiles of 32 clinical features. (B) The LASSO model without renal histologic characteristics.

(C) LASSO coefficient profiles of 32 clinical and 13 renal histologic features. (D) The LASSO model with renal histologic characteristics. Dotted vertical lines were drawn at the optimal lambda values by using the minimum criteria and the 1 standard error of the minimum criteria in the LASSO model used 10-fold cross validation. 32 clinical factors included age, gender, hypertension, diabetes mellitus, SLE duration, white cell count, hemoglobin, platelet, low C3, low C4, anti-dsDNA, anti-SSA, anti-SSB, anti-RNP, anti-rRNP, anti-Smith, coomb' test, aPL antibodies, serum albumin, proteinuria, microscopic hematuria, serum creatinine, eGFR, SLEDAI, extrarenal SLEDAI, extrarenal organ involvement, methylprednisolone pulses, CYC, MMF, hydroxychloroquine, ACEI/ARB, no response. 13 pathologic features included endocapillary hypercellularity, neutrophils/karyorrhexis, fibrinoid necrosis, hyaline deposits, cellular/fibrocellular crescent, interstitial inflammation, global/segmental sclerosis, fibrous crescents, tubular atrophy, interstitial fibrosis, class IV, chronicity index (AI) and activity index (CI). 13 pathological variables were converted to dichotomous variables except for AI and CI.



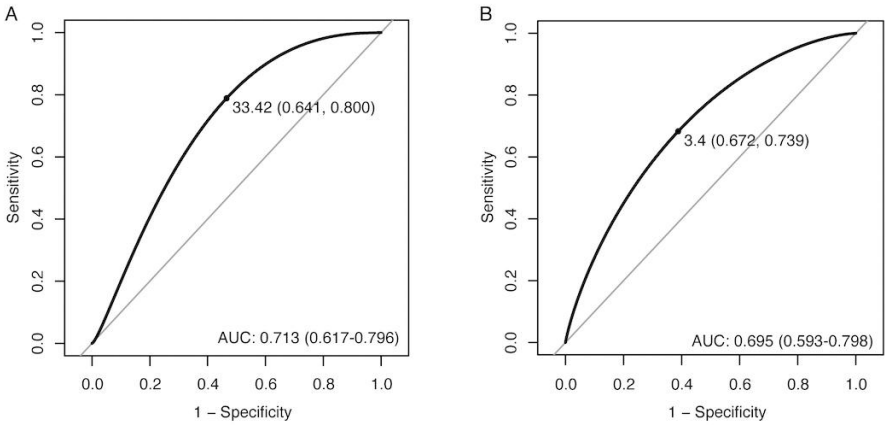
Supplementary Figure S4. Kaplan-Meier ESRD-free survival curves of 107 patients with lupus nephritis grouping by baseline eGFR and renal response to induction therapy at 6 months.

ESRD: end-stage renal disease;RR:complete response or partial response; NR: no response.

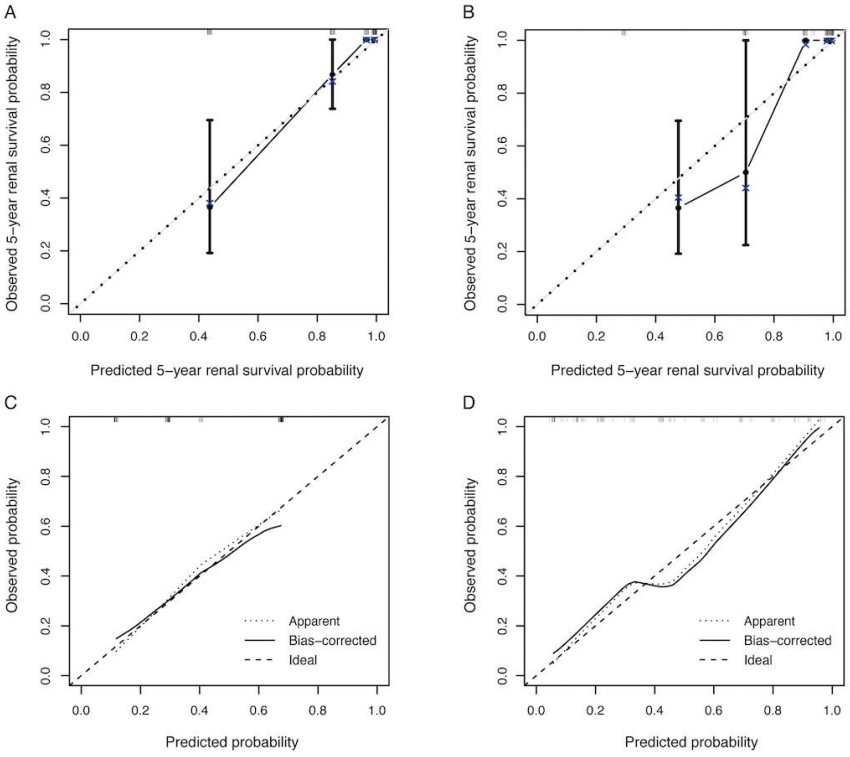


Supplementary Figure S5. Feature selection by the least absolute shrinkage and selection operator (LASSO) model to predict NR. (A) LASSO coefficient profiles of 31 clinical features. (B) The LASSO model without renal histologic characteristics. (C) LASSO coefficient profiles of 31 clinical and 13 renal histologic features. (D) The LASSO model with renal histologic characteristics. Dotted vertical lines were drawn

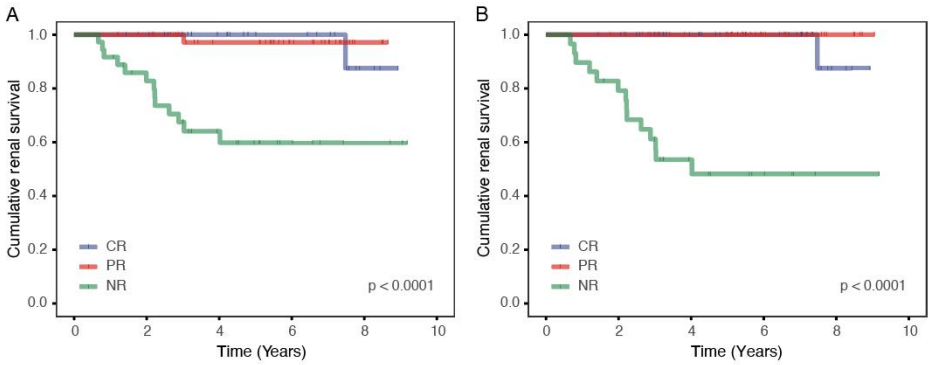
at the optimal lambda values by using the minimum criteria and the 1 standard error of the minimum criteria in the LASSO model used 10-fold cross validation.



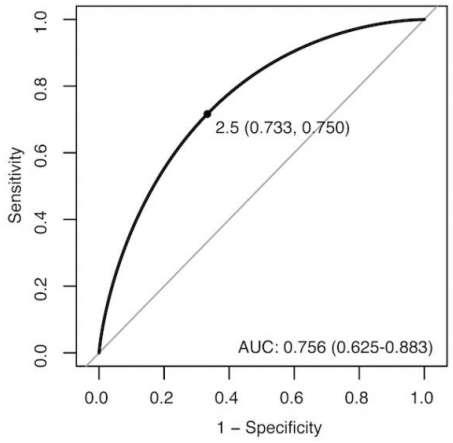
Supplementary Figure S6. The receiver operating characteristic (ROC) of (A) baseline eGFR to predict ESRD. (B) SLE duration (month) to predict no response at 6 months.



Supplementary Figure S7. Calibration curves analysis of the nomogram models. Calibration curve of the nomogram without pathology (A) and with pathology (B) predicting renal survival at 5-years. Calibration curve of the nomogram without pathology (C) and with pathology (D) predicting no response. Calibration curve of the nomogram predicting NR. The y-axis represents the observed rate of renal survival or treatment response. The x-axis represents the predicted rate. The diagonal dotted line represents the ideal model with the best prediction. The solid line represents the performance of the nomograms, the proximity of which to the diagonal dotted line represents the prediction abilities of models.



Supplementary Figure S8. Kaplan-Meier curves ESRD-free survival for renal treatment response at 12 months including 106 patients due to 1 case loss of follow-up (A) and 24 months including 103 patients, exlcuding 3 case lost and 1 case dead (B).



Supplementary Figure S9. The receiver operating characteristic (ROC) of proteinuria at 6 months to predict ESRD.